

REMARKS

Claims 1, 23, and 31-50 have been rejected as reciting subject matter anticipated by the Gao patent ('175 patent). In particular, the Examiner bases this rejection on the fact that "each pair (upstream and downstream pipe sections) define a different relatively gradual or rapid change in cross-sectional area". As clearly set forth in the '175 patent, the cone angle, alpha, of a core section of each pair of upstream and downstream core sections is the same. Different pairs of upstream and downstream core sections may have different cone angles but each upstream and downstream core section of a pair has the same cone angle.

In the present invention, the upstream and downstream core sections of a pair of core sections defines a different cone angle. In particular, independent Claims 1, 31 and 32 define the upstream core pipe section having a cone angle of less than 40 degrees and the downstream core pipe section having an angle of greater than 40 degrees. Thus, the core pipe sections of a pair of core pipe sections define different cone angles. This concept is contrary to the teachings espoused in the '175 patent. Support for this claim language appears in paragraphs 10-15 in applicant's published application No. US2007/0177452.

One must therefore come to the inescapable conclusion that independent Claims 1, 31 and 32 recite subject matter not anticipated by any disclosure contained in the '175 patent. Allowance of independent Claims 1, 31 and 32 is respectfully requested.

As remaining Claims 23, and 31-50 ultimately depend from one of the allowable independent claims, allowance of these dependent claims is respectfully requested.

Claim 26 has been rejected as reciting subject matter obvious over the '175 patent on the basis that ratio sizes are not considered unobvious. For reasons set forth above, independent Claim 1, from which Claim 26 depends, recites subject matter not disclosed in the '175 patent. This deficiency is not cured by the allegations set forth in the rejection. Accordingly, Claim 26, depending from an allowable claim, is allowable, which allowance is respectfully requested.

Claims 24, 29 and 30 have been rejected as reciting subject matter obvious over the '175 patent. This argument is based upon illustrations and discussions relating to Figures 6a and 9a. However, the angles of alpha and beta with respect to the structure shown in Figure 6a are recited as "angle alpha is the half conical angle of the upper pulser tube and angle beta is the half conical angle of the lower pulser tube" (column 6, lines 37-39). Thus, angles alpha and beta may be the same. Furthermore, angles alpha and beta are a function of the upper pulser tube and the lower pulser tube, respectively. Therefore, these angles are controlled by factors irrelevant to the recitations set forth in dependent Claims 24, 29 and 30.

With respect to Figure 9a, angles A, B, C and D are a function of their respective diffuser cone or reducer cone and may in fact be the same or different. That is, each is half of the conical angle of the respective diffuser cone or reducer cone. Thus, adjacent angles A and B, C and D,

are not a function of the respective cone sections but of the conical angle of respective sections connected thereto. One must therefore come to the conclusion that the conical angle of the upstream and downstream core section of a pair of core sections are determined by factors independent of one another and therefore may be the same or different. Clearly, such teachings do not even suggest the relative conical angles of the present invention as recited in independent Claim 1, from which Claims 24, 29 and 30 depend.

Withdrawal of the rejection of Claims 24, 29 and 30 and allowance of these claims is respectfully requested.

In view of the amendments to the claims to more particularly point out and distinctly claim the invention, the discussion of the '175 patent teachings relied upon by the Examiner, and the inapplicability thereof with respect to either an anticipation rejection or an obviousness rejection, it is believed that the application is in condition for allowance, which allowance is respectfully requested.

Respectfully submitted,

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